

Claims

1. Production process of an integrated micro-system type component, comprising a flat suspended micro-structure (5), using a sacrificial layer (2) of polymer material deposited on a substrate (1) and having side walls (10) confining the flat suspended structure (5), process successively comprising a planarization step, a deposition step of a formation layer (3) of the suspended structure (5), an etching step of at least one opening (4) of the formation layer (3) up to the level of the front face of the sacrificial layer (2) and a dry etching step of the sacrificial layer (2), process characterized in that it comprises, between deposition of the sacrificial layer (2) and the planarization step, a deposition step, on at least a part of the substrate (1) and of the front face of the sacrificial layer (2), of an embedding layer (6) presenting a larger thickness than the thickness of the sacrificial layer (2), so that, after the planarization step, the front faces of the sacrificial layer (2) and of the embedding layer (6) form a common flat surface, the formation layer (3) of the suspended structure (5) being deposited on the front face of the common flat surface.
2. Production process according to claim 1, characterized in that the planarization step comprises chemical mechanical polishing.
3. Production process according to one of the claims 1 and 2, characterized in that the planarization step successively comprises a chemical mechanical polishing sub-step of the embedding layer (6) and an etching sub-step of the embedding layer (6) so that the front faces of the sacrificial layer (2) and of the embedding layer (6) form a common flat surface.

4. Production process according to one of the claims 1 and 2, characterized in that the side walls (10) of the sacrificial layer (2) are confined by etching by means of a mask (7) formed on the front face of a layer (2a) made from polymer material by deposition, lithography and etching of a temporary layer, deposition of the embedding layer (6) being performed on the assembly formed by the sacrificial layer (2) and the mask (7), the mask being eliminated in the course of the planarization step.

5. Production process according to claim 4, characterized in that the planarization step comprises an etching step of the mask (7).

6. Production process according to any one of the claims 1 to 5, characterized in that, the component comprising salient elements (8) on the substrate (1), the process successively comprises, before deposition of the sacrificial layer (2), deposition on at least one zone of the substrate (1) designed to be covered by the sacrificial layer (2) and comprising salient elements (8), of a base layer (9) presenting a larger thickness than the thickness of the salient elements (8), and an additional planarization step, by chemical mechanical polishing, of the base layer (9) so that the front faces of the base layer (9) and of the salient elements (8) form a common flat surface.

7. Component, produced by the process according to any one of the claims 1 to 6, characterized in that the two faces of the formation layer (3) of the suspended structure (5) are totally flat.